

Area of Irregular Figures (6)–Landscaping

Name: _____

Date: _____ Pd: _____

Duke Gardens has hired a landscaper to create different geometric patterns in their lawns by planting Kentucky Bluegrass and Ryegrass sod at specific locations throughout their campus. Find out the square yardage needed for both types of sods at each of the following campus sites.

Site #1 Rectangle at $(-3,1)$, $(3,1)$, $(3,-1)$, and $(-3,-1)$. Circle center points at $(-2,0)$, $(0,0)$, and $(2,0)$.

*The circumference of circles extends to the perimeter of the rectangle, but not beyond. Circles are filled w/ryegrass sod, irregular-shaped regions w/bluegrass. Area of a circle = πr^2 .

square yards of bluegrass sod: _____ square yards of ryegrass sod: _____.

Site #2 Rectangle at $(-4,2)$, $(3,2)$, $(3,-2)$, and $(-4,-2)$. Diagonal parallelogram at $(0,2)$, $(3,2)$, $(-1,-2)$, and $(-4,-2)$. *The diagonal region fill w/ryegrass sod, triangles fill w/bluegrass.

square yards of bluegrass sod: _____ square yards of ryegrass sod: _____.

Site #3

Square at $(-2,2)$, $(2,2)$, $(2,-2)$, and $(-2,-2)$. Circle center point at $(0,0)$. *The circumference will extend to the perimeter of square, but not beyond. Circular region fill w/bluegrass, corner regions fill w/ryegrass. Area of a circle = πr^2 .

square yards of bluegrass sod: _____ square yards of ryegrass sod: _____.

Extra Practice:

4. Graph figure PQRS: $P(-4, 3)$, $Q(10, 3)$, $R(10, -3)$, $S(-4, -3)$.

- Determine the area and perimeter of the figure.
- Give the coordinates of a figure that has a perimeter half that of figure PQRS.
- Give the coordinates of a triangle that has an area half that of figure PQRS.

5. Graph rectangle $MNOP$: $M(4,-3)$, $N(10,-3)$, $O(4,-7)$, $P(10,-7)$. Determine the perimeter and area of the figure. Give the coordinates for rectangle $QRST$ that has the same area, but a different perimeter.

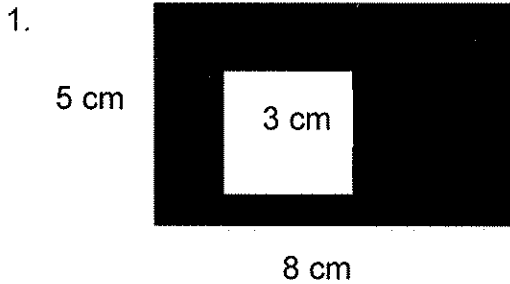
6. Graph triangle ABC : $A(4,9)$, $B(1,3)$, $C(8,3)$. Determine the area of the triangle. Give the coordinates for a triangle DEF that has an area twice that of triangle ABC .

Name: _____

Date: _____ Period: _____

Inscribed Figures

Find the area of the shaded portion of the following figures:



Area of rectangle: _____

Area of square: _____

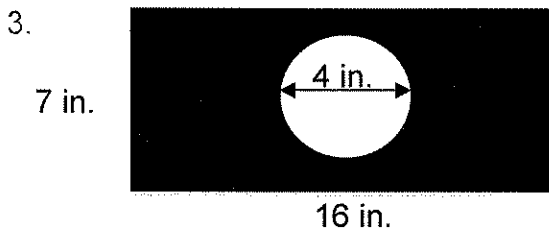
Area of shaded region: _____



Area of square: _____

Area of triangle: _____

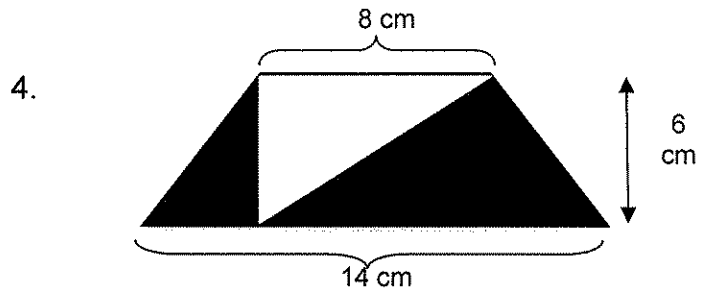
Area of shaded region: _____



Area of rectangle: _____

Area of circle: _____

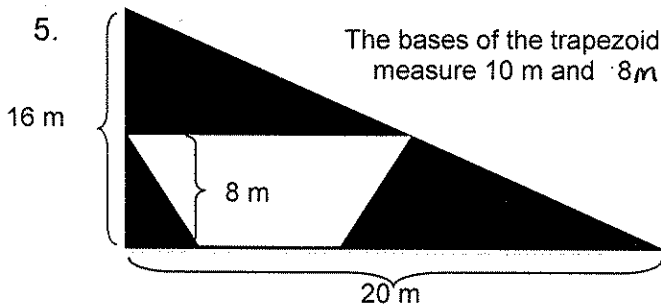
Area of shaded region: _____



Area of trapezoid: _____

Area of triangle: _____

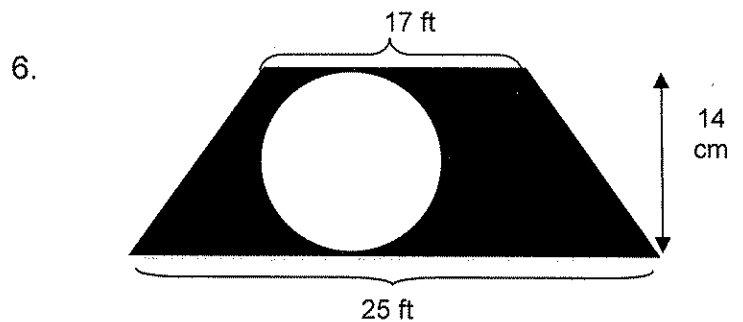
Area of shaded region: _____



Area of triangle: _____

Area of *trapezoid* _____

Area of shaded region: _____



Area of Square: _____

Area of *circle* _____

Area of shaded region: _____